



Application No.: 09/271,584

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A transgenic plant comprising a construct comprising a plant promoter operably linked to a recombinant nucleic acid molecule encoding a polypeptide having Na⁺/H⁺ transporter activity that provides increased salt tolerance in a cell, wherein said nucleic acid molecule is selected from the group consisting of:

(a) a nucleic acid molecule of the coding strand shown in SEQ ID NO:1, or a complement thereof;

(b) a nucleic acid molecule encoding SEQ ID NO:2; and

(c) a nucleic acid molecule encoding an amino acid sequence at least 95% identical to the amino acid sequence shown in SEQ ID NO:2.

2-4. (Canceled).

5. The transgenic plant of claim 1, wherein the polypeptide having Na⁺/H⁺ transporter activity comprises an AtNHX transporter polypeptide.

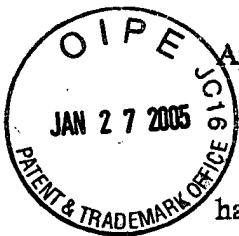
6. (Canceled).

7. (Canceled).

8. (Previously Presented) The transgenic plant of claim 1, wherein the promoter is a constitutive promoter or an inducible promoter.

9-13. (Canceled).

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14. (Previously Presented) The transgenic plant of claim 1, wherein the polypeptide having Na⁺/H⁺ transporter activity extrudes monovalent cations into a vacuole of said plant.

15-17. (Canceled).

18. (Previously Presented) An expression transgene comprising a recombinant nucleic acid molecule encoding a polypeptide having Na⁺/H⁺ transporter activity that provides increased salt tolerance in a cell operably linked to a promoter selected from the group consisting of a super promoter, a 35S promoter of cauliflower mosaic virus, a drought-inducible promoter, an ABA-inducible promoter, a heat shock-inducible promoter, a salt-inducible promoter, a copper-inducible promoter, a steroid-inducible promoter and a tissue-specific promoter, wherein said nucleic acid molecule is selected from the group consisting of:

(a) the nucleic acid molecule of the coding strand shown in SEQ ID NO:1, or a complement thereof;

(b) a nucleic acid molecule encoding SEQ ID NO:2; and

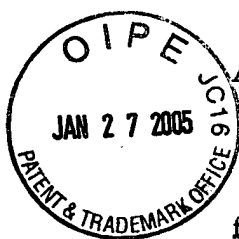
(c) a nucleic acid molecule encoding an amino acid sequence at least 95% identical to the amino acid sequence shown in SEQ ID NO:2.

19. (Previously Presented) A plant cell or a progeny thereof, wherein the plant cell, or the progeny thereof comprises the expression transgene of claim 18.

20 (Canceled).

21. (Previously Presented) A plant, a plant part, a seed, a plant cell or a progeny thereof, wherein the plant, plant part, seed, plant cell, or progeny thereof comprises the expression transgene of claim 18.

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22. (Previously Presented) The plant part of claim 21, comprising all or part of a leaf, a flower, a stem, a root or a tuber.

23. (Previously Presented) The plant, plant part, seed or plant cell of claim 21, wherein the plant, plant part, seed or plant cell is of a species selected from the group consisting of alfalfa, almond, apple, apricot, arabidopsis, artichoke, atriplex, avocado, barley, beet, birch, brassica, cabbage, cacao, cantaloupe, carnations, castorbean, cauliflower, celery, clover, coffee, corn, cotton, cucumber, garlic, grape, grapefruit, hemp, hops, lettuce, maple, melon, mustard, oak, oat, olive, onion, orange, pea, peach, pear, pepper, pine, plum, poplar, potato, prune, radish, rape, rice, roses, rye, salicornia, sorghum, soybean, spinach, squash, strawberries, sunflower, sweet corn, tobacco, tomato and wheat.

24. (Previously Presented) The plant, plant part, seed or plant cell of claim 21, wherein the plant is a dicot plant.

25. (Previously Presented) The plant, plant part, seed or plant cell of claim 21, wherein the plant is a monocot plant.

26. (Previously Presented) A method for producing a recombinant plant cell that expresses a nucleic acid molecule, the method comprising introducing into a plant cell the expression transgene of claim 18.

27. (Previously Presented) A method of producing a genetically transformed plant which expresses PNHX transporter polypeptide, comprising regenerating a genetically transformed plant from the plant cell, seed or plant part of claim 21.

28. (Previously Presented) The method of claim 26, wherein the genome of the plant cell also comprises a functional PNHX gene.

29. (Previously Presented) The method of claim 26, wherein the genome of the plant cell does not comprise a functional PNHX gene.

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30. (Previously Presented) A transgenic plant produced according to the method of claim 27.

31. (Previously Presented) A method for expressing a PNHX transporter polypeptide in the plant cell of claim 19, the method comprising culturing the plant cell under conditions suitable for gene expression, wherein the PNHX transporter polypeptide is expressed.

32. (Previously Presented) A method for producing a transgenic plant that expresses elevated levels of PNHX transporter polypeptide relative to a non-transgenic plant, comprising transforming a plant with the expression transgene of claim 18 such that the PNHX transporter polypeptide is expressed at elevated levels in the plant relative to a plant that has not been transformed with the expression transgene.

33-52. (Canceled).

53. (Previously Presented) A method of producing a genetically transformed plant, wherein the method comprises:

(a) cloning or synthesizing a nucleic acid molecule encoding a polypeptide having Na⁺/H⁺ transporter activity that provides increased salt tolerance in a cell, wherein said nucleic acid molecule is selected from the group consisting of: (i) the nucleic acid molecule of the coding strand shown in SEQ ID NO:1, or a complement thereof; (ii) a nucleic acid molecule encoding SEQ ID NO:2; and (iii) a nucleic acid molecule encoding an amino acid sequence at least 95% identical to the amino acid sequence shown in SEQ ID NO:2, wherein said nucleic acid molecule encodes a polypeptide capable of providing salt tolerance to a plant;

(b) inserting the nucleic acid molecule in a vector so that the nucleic acid molecule is operably linked to a promoter;

(c) inserting the vector into a plant cell or plant seed;

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(d) regenerating a plant from the plant cell or plant seed, wherein salt tolerance in the plant is increased compared to a wild type plant.

54. (Previously Presented) A transgenic plant produced according to the method of claim 53.

55. (Canceled).

56. (Currently Amended) An isolated nucleic acid molecule encoding PNHX transporter polypeptide, wherein said polypeptide ~~or fragment thereof~~ has Na⁺/H⁺ transporter activity that provides increased salt tolerance in a cell, wherein said nucleic acid comprises SEQ ID NO:1.

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